

**AMENDMENTS TO THE CLAIMS**

The following listing of claims replaces all prior versions and listings of claims in the above-referenced application:

1           1.       (Currently amended)     An integrated circuit (IC) chip comprising:  
2           a square-wave audio signal generator adapted to generate square-wave ~~signals~~  
3 signal at an audio frequencies frequency;  
4           a counter adapted to digitally count from zero to a predetermined number;  
5           a register adapted to hold a volume control value;  
6           a comparator connected to said counter and connected to said register, said  
7 comparator adapted to compare ~~the~~ a present count from the counter with the volume  
8 control value ~~and to~~ produce a modulation signal; and  
9           an AND gate connected to said square-wave ~~audio~~ signal generator and  
10 connected to said comparator, said AND gate adapted to combine, in a logical AND  
11 operation, the ~~audio-frequency~~ square-wave signal with the modulation signal to  
12 generate an output signal that is on, when both the square-wave signal and the  
13 modulation signal are on, and off when one or both of the square-wave signal and the  
14 modulation signal are off.

1           2.       (Currently amended)     The IC recited in claim 1 wherein said  
2 square-wave audio signal generator generates a square-wave audio signal ~~generator~~  
3 having a frequency within a range from 500 Hz to five KHz.

1           3.       (Original)       The IC recited in claim 1 wherein said counter is a 5-bit  
2 counter adapted to count from 0 to 31.

1           4.       (Original)       The IC recited in claim 1 wherein said counter operates  
2 at a counter frequency on the order of MHz.

1           5.       (Original)       The IC recited in claim 1 wherein said register is a pulse  
2 width register having five bits.

1           6.       (Original)     The IC recited in claim 1 wherein the integrated circuit  
2 chip is an application specific integrated circuit chip (ASIC).

1           7.       (Currently amended)     A method of generating [a] modulated  
2 square-wave audio signal, the method comprising:  
3           generating a square-wave audio signal having a first audio frequency;  
4           repeatedly counting a predetermined range of values generating count signals;  
5           modulating the count signal[s] with a volume control signal resulting in [a]  
6 modulation signal; ~~and~~  
7           modulating the square-wave ~~audio~~ signal with the modulation signal to  
8 generate a modulated square-wave signal that is on when both the square wave signal  
9 and the modulation signal are on and off when one or both of the square-wave signal  
10 and the modulation signal are off.

1           8.       (Original)     The method recited in claim 7 wherein the first audio  
2 frequency is within a range from 500 Hz to five KHz.

1           9.       (Currently amended)     The method recited in claim 7 wherein the  
2 ~~digital~~ repeatedly counting step counts from 0 to 31.

1           10.      (Currently amended)     The method recited in claim 7 wherein the  
2 ~~digital~~ repeatedly counting step operates at a counter frequency on the order of MHz.

1           11.      (Currently amended)     The method recited in claim 7 wherein the  
2 volume control signal is set at a value within a range counted by the ~~digital~~ repeatedly  
3 counting step.

1           12.      (Canceled)

1           13.     (Currently amended)     An apparatus comprising:  
2           an integrated circuit (IC) chip adapted to generate a modulated ~~audio~~  
3 ~~frequency~~ square-wave signal;  
4           an amplifier subsystem connected to said IC chip, the amplifier subsystem  
5 adapted to filter and amplify the modulated square-wave ~~audio~~ signal ~~and to amplify~~  
6 ~~the filtered audio signal~~, wherein said IC chip comprises:  
7                 a square-wave ~~audio~~ signal generator adapted to generate a square-  
8 wave ~~signals~~ signal at an audio ~~frequencies~~ frequency;  
9                 a counter adapted to digitally count from zero to a predetermined  
10 number;  
11                 a register adapted to hold a volume control value;  
12                 a comparator connected to said counter and connected to said register,  
13 said comparator adapted to compare ~~the~~ a present count from the counter with the  
14 volume control value ~~and to~~ produce a modulation signal; and  
15                 an AND gate connected to said square-wave ~~audio~~ signal generator  
16 and connected to said comparator, said AND gate adapted to combine, in a  
17 logical AND operation, the ~~audio-frequency~~ square-wave signal with the  
18 modulation signal to generate a modulated output signal that is on, when both  
19 the square wave signal and the modulation signal are on, and off when one or  
20 both of the square-wave signal and the modulation signal are off.

1           14.     (Currently amended)     The apparatus recited in claim 13 wherein  
2 said square-wave ~~audio~~ signal generator generates a square-wave ~~audio~~ signal having  
3 a frequency within a range from 500 Hz to five KHz.

1           15.     (Original)     The apparatus recited in claim 13 wherein said counter  
2 is a 5-bit counter adapted to count from 0 to 31.

1           16.     (Original)     The apparatus recited in claim 13 wherein said counter  
2 operates at a counter frequency on the order of MHz.

1           17.     (Original)     The apparatus recited in claim 13 wherein said register  
2     is a pulse width register having five bits.

1           18.     (Original)     The apparatus recited in claim 13 wherein said  
2     amplifier subsystem comprises a resistor-capacitor (RC) filter connected to a fixed  
3     gain amplifier.